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Is it not thus that fire is amassed and makes the greatest part of the substance of combustible bodies ?

Perhaps when this globe was first formed and its original particles took their place at certain distances from the centre in proportion to their greater or less gravity, the fluid fire attracted towards that centre might in great part be obliged, as lightest, to take place above the rest, and thus form the sphere of fire above supposed; which would afterwards be continually diminishing by the substance it afforded to organized bodies, and the quantity restored to it again by the burning or other separating of the parts of those bodies ?

Is not the natural heat of animals thus produced by separating in digestion the parts of food, and setting their fire at liberty ?

Is it not this sphere of fire which kindles the wandering globes that sometimes pass through it in our course round the sun, have their surface kindled by it, and burst when their included air is greatly rarefied by the heat on their burning surface ?

May it not have been from such considerations that the ancient philosophers supposed a sphere of fire to exist above the air of our atmosphere ?

N^o. III.

Description of the process to be observed in making large sheets of paper in the Chinese manner, with one smooth surface. Communicated by Dr. B. FRANKLIN.

Read June 20, 1788. **I**N Europe to have a large surface of paper connected together and smooth on one side, the following operations are performed.

1. A number of small sheets are to be made separately.
2. These

2. These are to be couched, one by one, between blankets.

3. When a heap is formed it must be put under a strong press, to force out the water.

4. Then the blankets are to be taken away, one by one, and the sheets hung up to dry.

5. When dry they are to be again pressed, or if to be sized, they must be dipped into size made of warm water, in which glue and allum are dissolved.

6. They must then be pressed again to force out the superfluous size.

7. They must then be hung up a second time to dry, which if the air happens to be damp requires some days.

8. They must then be taken down, laid together, and again pressed.

9. They must be pasted together at their edges.

10. The whole must be glazed by labour, with a flint.

In China, if they would make sheets, suppose of four and an half ells long and one and an half ell wide, they have two large vats, each five ells long and two ells wide, made of brick, lined with a plaster that holds water. In these the stuff is mixed ready to work.

Between these vats is built a kiln or stove, with two inclining sides; each side something larger than the sheet of paper; they are covered with a fine stucco that takes a polish, and are so contrived as to be well heated by a small fire circulating in the walls.

The mould is made with thin but deep sides, that it may be both light and stiff: It is suspended at each end with cords that pass over pulleys fastened to the ceiling, their ends connected with a counterpoise nearly equal the weight of the mould.

Two men one at each end of the mould, lifting it out of the water by the help of the counterpoise, turn it and apply it with the stuff for the sheet, to the smooth sur-

face of the stove, against which they press it, to force out great part of the water through the wires. The heat of the wall soon evaporates the rest, and a boy takes off the dried sheet by rolling it up. The side next the stove receives the even polish of the stucco, and is thereby better fitted to receive the impression of fine prints. If a degree of sizing is required, a decoction of rice is mixed with the stuff in the vat.

Thus the great sheet is obtained, smooth and sized, and a number of the European operations saved.

As the stove has two polished sides, and there are two vats, the same operation is at the same time performed by two other men at the other vat; and one fire serves.

N^o. IV.

QUERIES and CONJECTURES relating to Magnetism, and the Theory of the Earth, in a Letter from Dr. B. FRANKLIN, to Mr. BODOIN,

DEAR SIR,

Read Jan. 15, 1790. **I** RECEIVED your favours by Messrs. Gore, Hilliard and Lee, with whose conversation I was much pleased, and wished for more of it; but their stay with us was too short. Whenever you recommend any of your friends to me, you oblige me.

I want to know whether your Philosophical Society received the second volume of our Transactions. I sent it, but never heard of its arriving. If it miscarried, I will send another. Has your Society among its books the French Work *sur les Arts & les Metiers*? It is voluminous, well executed, and may be useful in our country. I have bequeathed it them in my will; but if they have it already, I will substitute something else.

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